

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	Title Sheet & Summary

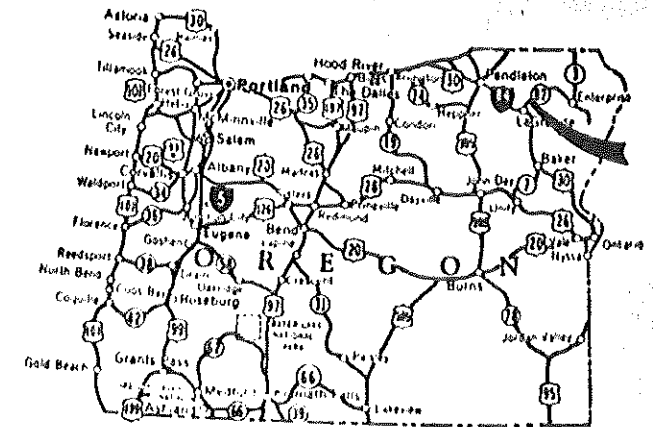
STATE OF OREGON
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY DIVISION

Overall Length of Work Area - All Miles

ELGIN SECTION WALLOWA LAKE HIGHWAY UNION COUNTY				
RD. ROAD Dist. No.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET No.
10	OREGON	F-7 (10)		1
				TOTAL SHEETS
				See Index

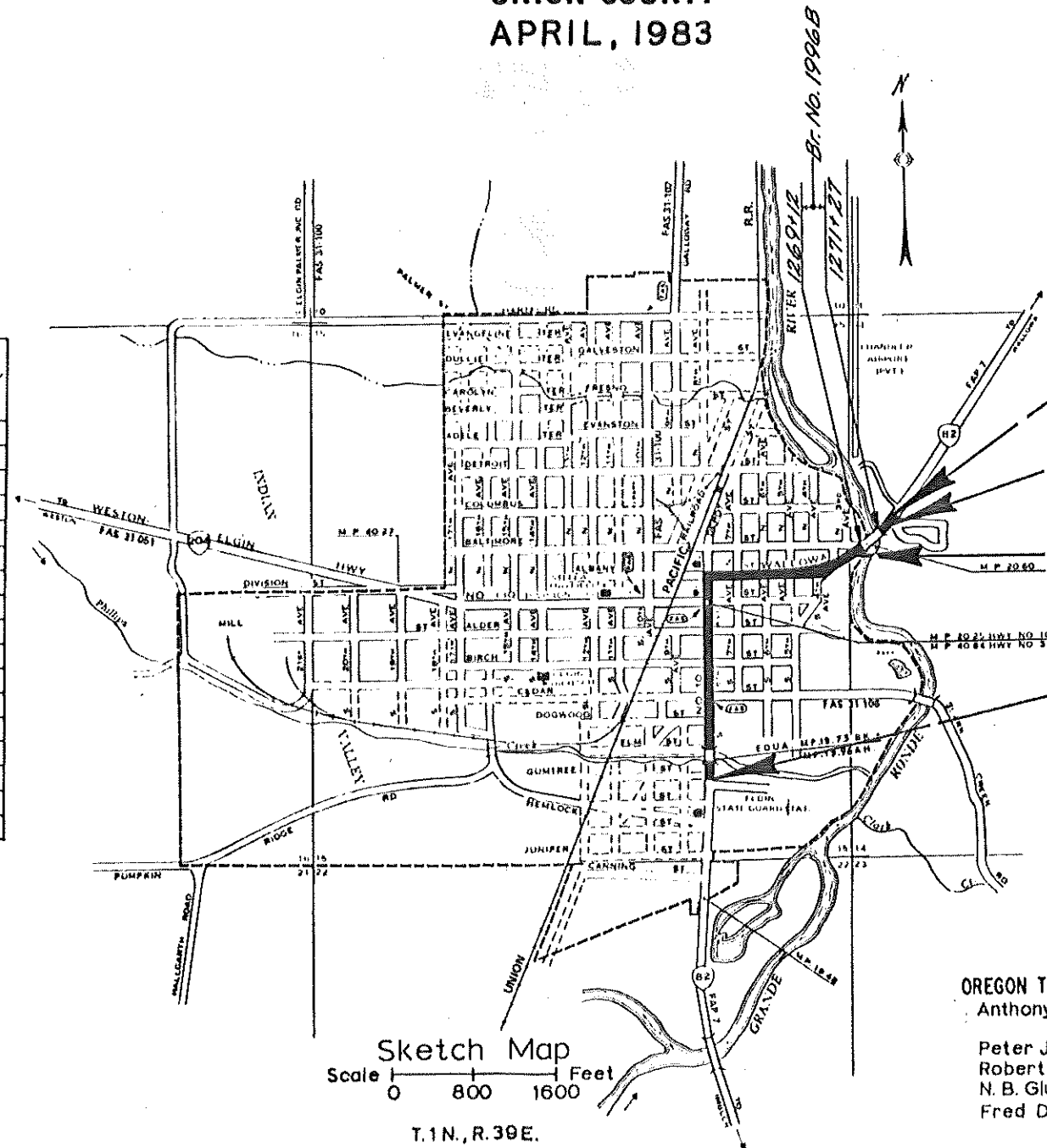
Drq. Nos.
38274, 38275, } Bridge No. 1996
35269, 5435, }
5436, 5437 }
5-1, 5-5, 5-6, } Temporary Protection
5-12, 2126, 2126A, } And Direction Of Traffic
2126C, 2203 }

PLANS FOR PROPOSED PROJECT
DECK REPLACEMENT
ELGIN SECTION
WALLOWA LAKE HIGHWAY
UNION COUNTY
APRIL, 1983



S U M M A R Y

ITEM	UNIT	QUANTITY
Mobilization	All	All
Temporary Protection And Direction Of Traffic	All	All
Temporary Signs	Sq. Ft.	164
Temporary Barricades	Each	5
Temporary Continuous Rail Traffic Barriers, ReflectORIZED	Lin. Ft.	200
Temporary Guard Rail, Type 1A	Lin. Ft.	215
Flagman	Hour	100
STRUCTURE		
Bridge Removal Work And Temporary Supports	All	All
Structural Concrete, Class 4000	All	All
Structural Concrete, Class 4500	All	All
Reinforcement	All	All
Reinstalling Steel Railing	Lin. Ft.	215
Membrane Waterproofing	Sq. Yd.	860
Class "C" Asphalt Concrete	Ton	130

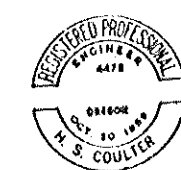


END OF PROJECT F-7(10)
Sta. 1273+00

END OF CONTRACT WORK
Sta. 1272+27

BEGINNING OF CONTRACT WORK
Sta. 1268+12

BEGINNING OF PROJECT F-7(10)
Sta. 1233+64



H. S. Coulter

STATE HIGHWAY ENGINEER



E. S. Hunter

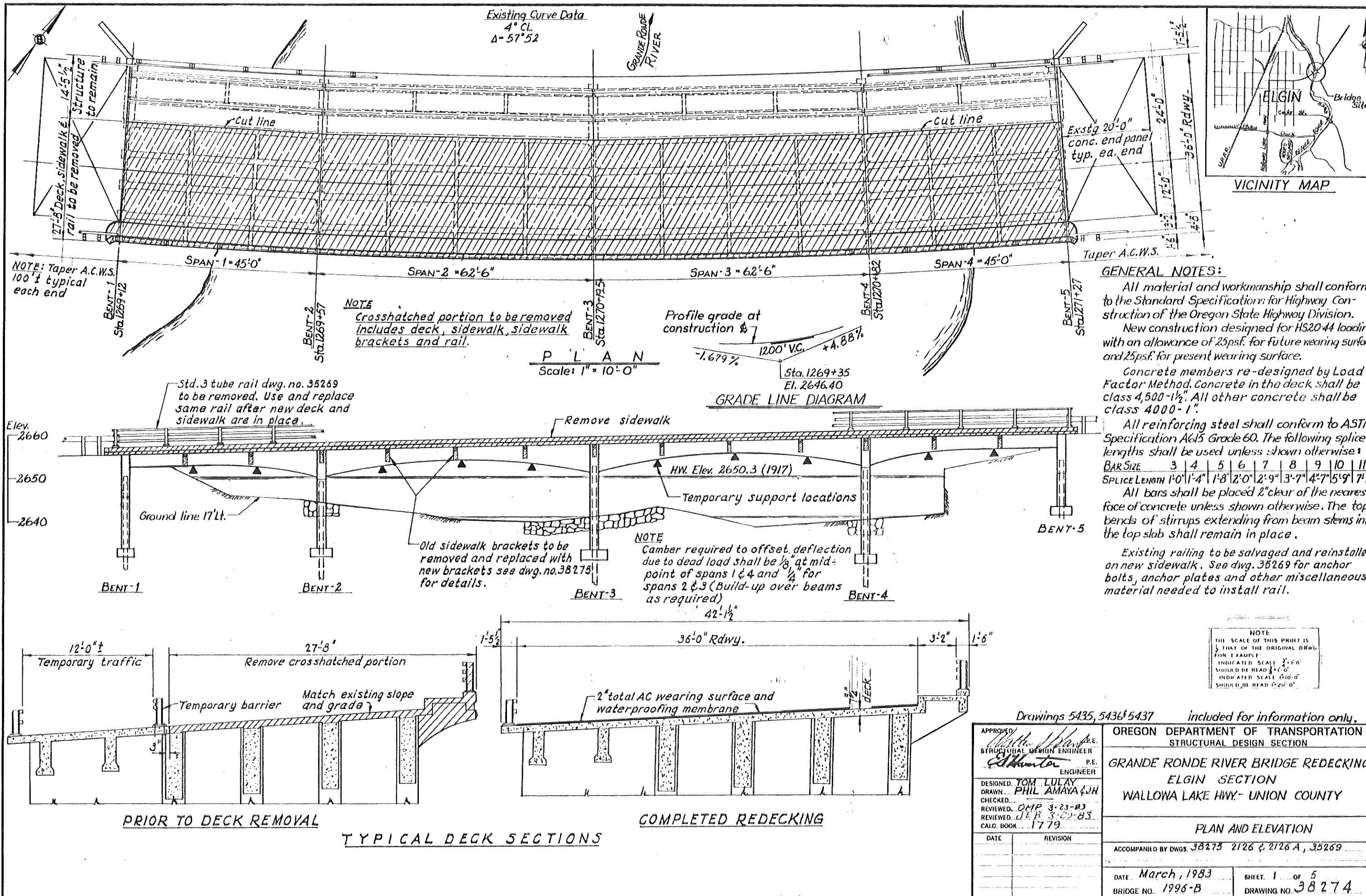
ASSISTANT STATE HIGHWAY ENGINEER

OREGON TRANSPORTATION COMMISSION
Anthony Yturri

Peter J. Brix
Robert F. Dwyer
N. B. Glustina
Fred D. Miller

CHAIRMAN
VICE CHAIRMAN
COMMISSIONER
COMMISSIONER
COMMISSIONER
DIRECTOR OF TRANSPORTATION

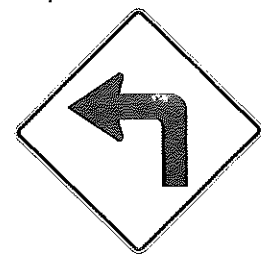
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
FIELD OPERATIONS ENGINEER DATE



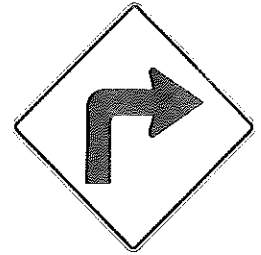
All signs on this sheet shall be Type "D" when used as permanent signing and Type "O" when used on maintenance or construction work, unless noted otherwise.

Warning signs shall have non-reflectORIZED black letters, symbols and borders on a yellow or orange background, unless noted otherwise. All backgrounds shall be reflectORIZED. The Federal Highway Administration's standard rounded capital letter alphabets and letter spacing shall be used unless noted otherwise. For detailed sign drawings and dimensions, see the publication "Standard Highway Signs" by the Federal Highway Administration, 1971. The border, margin, and corner radii shall be as follows unless noted otherwise.

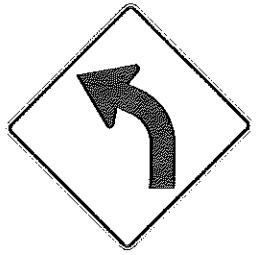
BOARD DIMENSIONS	BORDER	MARGIN	CORNER RADIUS
Either or both less than 30"	5/8"	3/8"	1 1/2"
Both 30"	3/4"	1/2"	1 7/8"
Both more than 30" & either less than 48"	7/8"	5/8"	2 1/4"
Both 48" or larger	1 1/4"	3/4"	3"



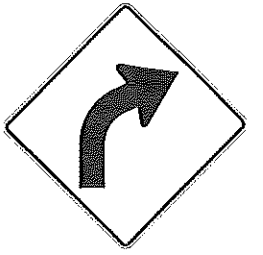
SIGN NUMBER	BOARD SIZE
W-1L-30	30" x 30"
W-1L-48	48" x 48"



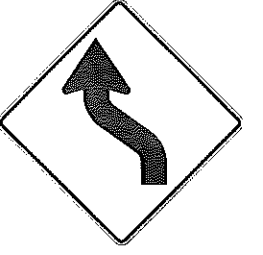
SIGN NUMBER	BOARD SIZE
W-1R-30	30" x 30"
W-1R-48	48" x 48"



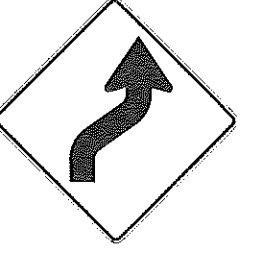
SIGN NUMBER	BOARD SIZE
W-2L-30	30" x 30"
W-2L-48	48" x 48"



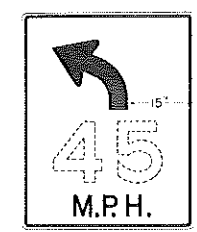
SIGN NUMBER	BOARD SIZE
W-2R-30	30" x 30"
W-2R-48	48" x 48"



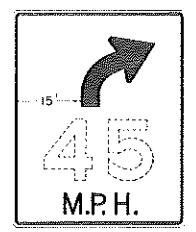
SIGN NUMBER	BOARD SIZE
W-4L-30	30" x 30"
W-4L-48	48" x 48"



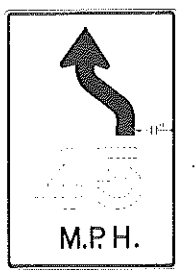
SIGN NUMBER	BOARD SIZE
W-4R-30	30" x 30"
W-4R-48	48" x 48"



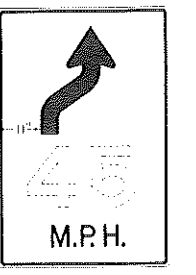
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4R-30	36" x 36"	4" x 6"
W-4R-48	48" x 48"	6" x 8"



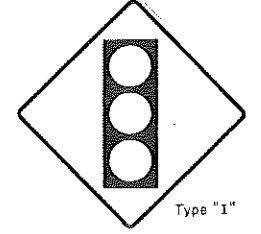
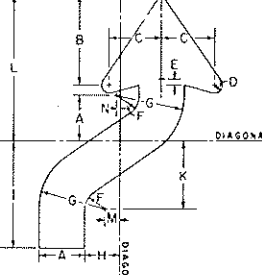
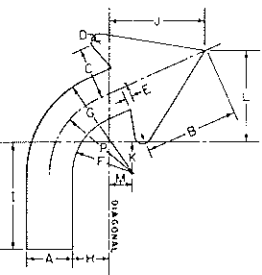
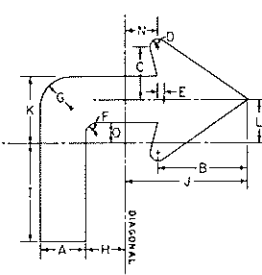
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



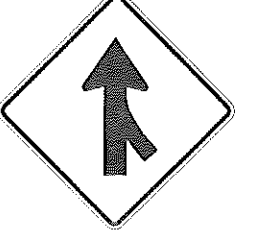
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4R-30	36" x 36"	4" x 6"
W-4R-48	48" x 48"	6" x 8"



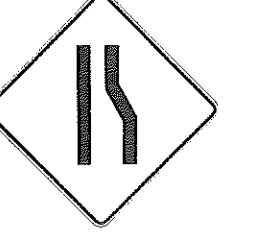
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



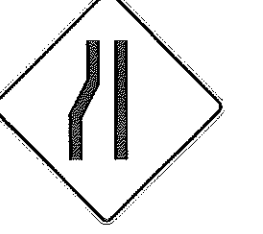
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



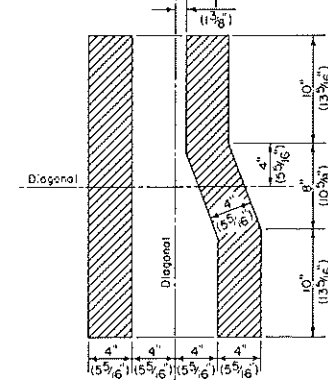
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



SIGN NUMBER	BOARD SIZE	LETTER HEIGHT
W-4L-30	36" x 36"	4" x 6"
W-4L-48	48" x 48"	6" x 8"



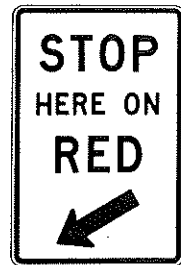
Details For W-4-2L (W-4-2R Reversed)

SIGN NO.	BOARD SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
W-1L-30	30" x 30"	4 3/8	8 7/8	5	7/8	1 1/8	1	3	3 3/4	9 1/8	12	6 1/4	4 1/8	—	3 1/8	1 7/8	—
W-1L-48	48" x 48"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
W-1R-30	30" x 30"	4 3/8	8 7/8	5	7/8	1 1/8	1	3	3 3/4	9 1/8	12	6 1/4	4 1/8	—	3 1/8	1 7/8	—
W-1R-48	48" x 48"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
W-2L-30	30" x 30"	4 3/8	8 7/8	5	7/8	1 1/8	1	3	3 3/4	9 1/8	12	6 1/4	4 1/8	—	3 1/8	1 7/8	—
W-2L-48	48" x 48"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
W-2R-30	30" x 30"	4 3/8	8 7/8	5	7/8	1 1/8	1	3	3 3/4	9 1/8	12	6 1/4	4 1/8	—	3 1/8	1 7/8	—
W-2R-48	48" x 48"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
W-4L-30	30" x 30"	4 3/8	8 7/8	5	7/8	1 1/8	1	3	3 3/4	9 1/8	12	6 1/4	4 1/8	—	3 1/8	1 7/8	—
W-4L-48	48" x 48"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
W-4R-30	30" x 30"	4 3/8	8 7/8	5	7/8	1 1/8	1	3	3 3/4	9 1/8	12	6 1/4	4 1/8	—	3 1/8	1 7/8	—
W-4R-48	48" x 48"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
OWI-8L-60	48" x 60"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
OWI-8R-60	48" x 60"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
OWI-9L-72	48" x 72"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—
OWI-9R-72	48" x 72"	7	14 3/8	8	1 3/8	1 1/8	1 5/8	4 7/8	6	15 1/2	19 3/8	10	6 1/2	—	5	3	—

ARROW DETAILS FOR W-1 SERIES SIGNS

DATE		INITIAL		REVISION	
4/73		[Signature]		General Revision	
11/77		[Signature]		Revised OWI-BL & OWI-BP	
4/79		[Signature]		Removed Plaques	
APPROVED: <i>[Signature]</i> TRAFFIC ENGINEER					
OREGON STATE HIGHWAY DIVISION TRAFFIC ENGINEERING SECTION STANDARD SIGNING DETAILS WARNING SIGNS DATE: June 1972 YES DAS TO S-6					

NOTE
THE SCALE OF THIS PRINT IS
APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.
DO NOT SCALE



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-1-30	30" x 30"	8"-C		
W-1-48	48" x 48"	12"-D		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	48" x 30"	8"-D		
W-2-48	48" x 30"	8"-D		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	48" x 30"	8"-D		
W-2-48	48" x 30"	8"-D		



SIGN SPECIFICATIONS					
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	CORNER RADIUS	LINE 1	LINE 2
W-1-4-30	60" x 30"	6"-C	5"-C	6"-C	1"
W-1-4-48	60" x 30"	6"-C	5"-C	6"-C	1"



Type "CC"



Type "CC"

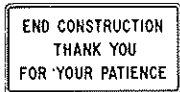
All signs in this section shall be Type "C" unless noted otherwise.

Regulatory signs shall have non-reflectORIZED black letters, symbols and borders on a white background, unless noted otherwise. All backgrounds shall be reflectORIZED. The Federal Highway Administration's standard rounded capital letter alphabets and letter spacing shall be used unless noted otherwise. For detailed sign drawings and dimensions, see the publication "Standard Highway Signs" by the Federal Highway Administration, 1971. The border, margin and corner radii shall be as follows unless noted otherwise.

BOARD DIMENSIONS	BORDER	MARGIN	CORNER RADIUS
Either or both less than 30"	5/8"	3/8"	1 1/2"
Both 30"	3/4"	1/2"	1 7/8"
Both more than 30" & either less than 48"	7/8"	5/8"	2 1/4"
Both 48" or larger	1 1/4"	3/4"	3"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 24"	6"-C		
W-2-48	48" x 24"	6"-C		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 24"	6"-C		
W-2-48	48" x 24"	6"-C		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 24"	6"-C		
W-2-48	48" x 24"	6"-C		

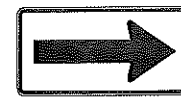


SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 24"	6"-C		
W-2-48	48" x 24"	6"-C		

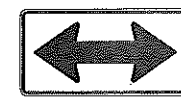


SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-4-30	30" x 24"	5"-D		
W-4-48	48" x 24"	8"-D		

Reverse arrow for sign No. W4-9L



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-4-30	30" x 24"	5"-D		
W-4-48	48" x 24"	8"-D		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-4-30	30" x 24"	5"-D		
W-4-48	48" x 24"	8"-D		

All signs in this section shall be Type "D" when used as permanent signing and Type "O" when used on maintenance or construction work, unless noted otherwise.

Warning signs shall have non-reflectORIZED black letters, symbols and borders on a yellow or orange background, unless noted otherwise. All backgrounds shall be reflectORIZED. The Federal Highway Administration's standard rounded capital letter alphabets and letter spacing shall be used unless noted otherwise. For detailed sign drawings and dimensions, see the publication "Standard Highway Signs" by the Federal Highway Administration, 1971. The border, margin, and corner radii shall be as follows unless noted otherwise.

BOARD DIMENSIONS	BORDER	MARGIN	CORNER RADIUS
Either or both less than 30"	5/8"	3/8"	1 1/2"
Both 30"	3/4"	1/2"	1 7/8"
Both more than 30" & either less than 48"	7/8"	5/8"	2 1/4"
Both 48" or larger	1 1/4"	3/4"	3"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-1-30	30" x 30"	8"-C		
W-1-48	48" x 48"	12"-D		

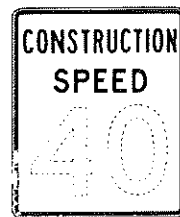


SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-1-30	30" x 30"	8"-D		
W-1-48	48" x 48"	8"-D		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-D		
W-2-48	48" x 48"	8"-D		

* Reduce spacing by 25%.



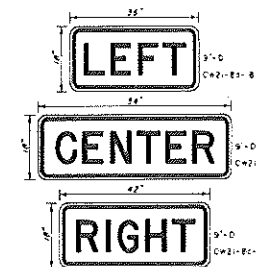
SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	4"-B	4"-D	15"-D
W-2-48	48" x 48"	6"-B	6"-D	24"-D



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-C	6"-C	6"-C
W-2-48	48" x 48"	8"-C	8"-C	8"-C



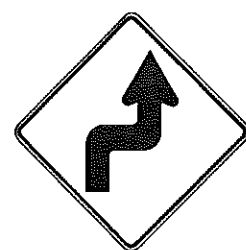
SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	7"-C		
W-2-48	48" x 48"	7"-C		



RIDERS FOR SIGN OW21-7-48



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-3-30	30" x 30"	7"-C		
W-3-48	48" x 48"	10"-D		



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-1-30	30" x 30"	7"-C		
W-1-48	48" x 48"	10"-D		

Reverse arrow for sign number W1-3L.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-C	5"-C	5"-C
W-2-48	48" x 48"	7"-C	7"-C	7"-C

* Reduce spacing by 40%.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	8"-D		
W-2-48	48" x 48"	8"-D		

* Reduce spacing by 40%.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-C	5"-C	5"-C
W-2-48	48" x 48"	7"-C	7"-C	7"-C



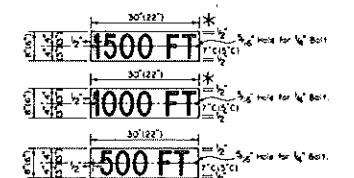
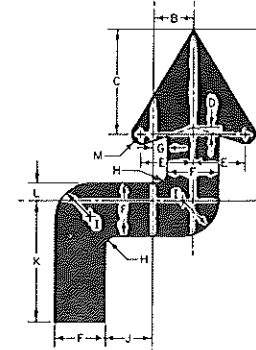
SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-C	5"-C	5"-C
W-2-48	48" x 48"	7"-C	7"-C	7"-C



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-C	5"-C	5"-C
W-2-48	48" x 48"	7"-C	7"-C	7"-C



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTER HEIGHT & SERIES	LINE 1	LINE 2
W-2-30	30" x 30"	5"-C	5"-C	5"-C
W-2-48	48" x 48"	7"-C	7"-C	7"-C



OVERLAYS FOR W20-(36) & 48 SIGNS
* Reduce spacing by 40%.

ARROW DETAILS FOR W1-3R & L SIGNS												
SIGN NUMBER	BOARD SIZE	A	B	C	D	E	F	G	H	I	J	K
W1-3R-30	30" x 30"	10 1/2"	3 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
W1-3R-48	48" x 48"	13 1/2"	4 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"

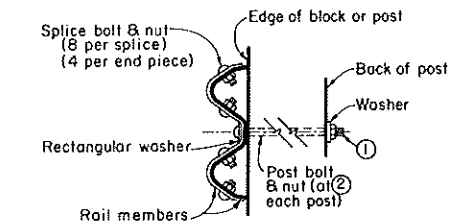
NOTE
THE SCALE OF THIS PRINT IS
APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.
DO NOT SCALE

DATE	INITIAL	REVISION
12/78	WJ	Added "TRUCKS" sign OW21-7
4/73	WJ	General Revision
2/75	WJ	Remove "SINGLE LANE AHEAD" revise "TRUCKS" sign number.
5/76	WJ	Revised OW21-7
6/77	WJ	Added W1-3R & L signs.
2/80	WJ	Revised M4-9, OW23-3, W20-5 & OW20-7. Added G20-1.

OREGON STATE HIGHWAY DIVISION
TRAFFIC ENGINEERING SECTION
**STANDARD
SIGNING DETAILS
CONSTRUCTION SIGNS**

DATE JUNE, 1972
APPROVED: *[Signature]*
TRAFFIC ENGINEER
DESIGN NO. S-12

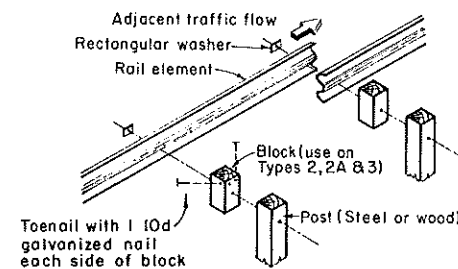
GUARD RAIL



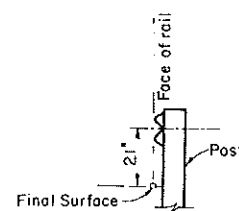
- ① Post bolts to extend beyond the tightened nuts within limits of $\frac{1}{4}$ to $\frac{1}{2}$
- ② When steel posts are used see "POSTS" for modified bolt details, Drg. No. 2126A.
- ③ All post bolt threads to be set after assembly for wrench removal only.

FITTINGS

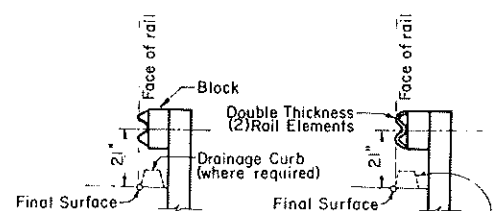
ASSEMBLY DETAILS



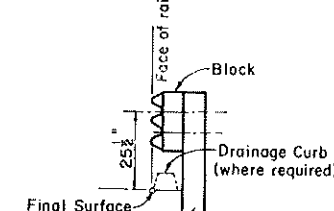
RELATION OF PARTS



TYPES 1 & 1A



TYPES 2 & 2A



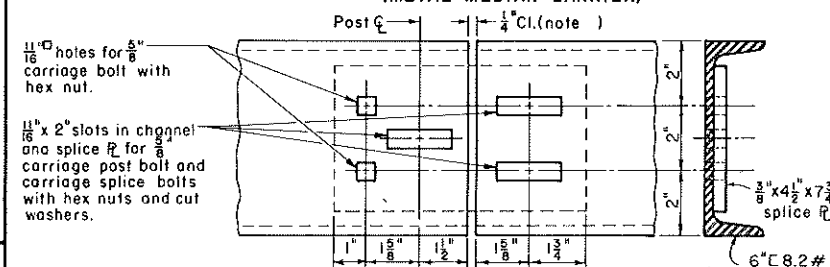
TYPE 3

TYPE 4

TABLE OF POST SPACING

TYPE	SPACING
1 & 2	12'-6"
1A & 2A	6'-3"
3	3'-1 1/2"
4	6'-3"

CHANNEL RAIL AND SPLICE PLATE (METAL MEDIAN BARRIER)

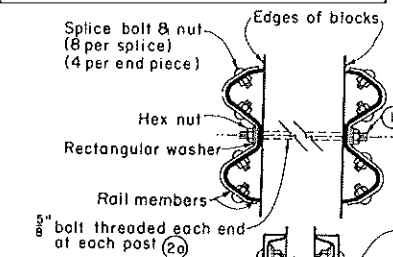


NOTES:

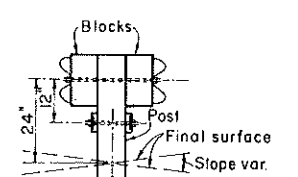
- Channel rail elements and splice plates to be of steel conforming to ASTM A-36 and to be galvanized after fabrication in accordance with ASSHO M III.
- Nuts, bolts and other hardware for channel rail assembly shall conform to OSHD Standard Specifications sub-section 710.08.
- Clearance to be $1\frac{1}{2}$ " at rail splice for bridge expansion joints.

METAL MEDIAN BARRIER

NOTE: Median barrier post spacing 6'-3". See end construction for variations.



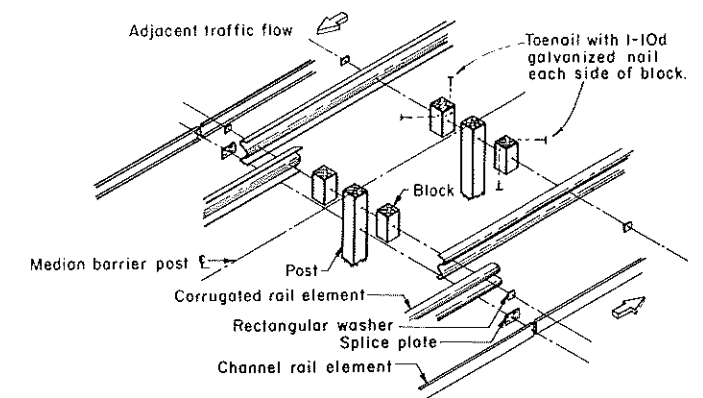
FITTINGS



SECTION

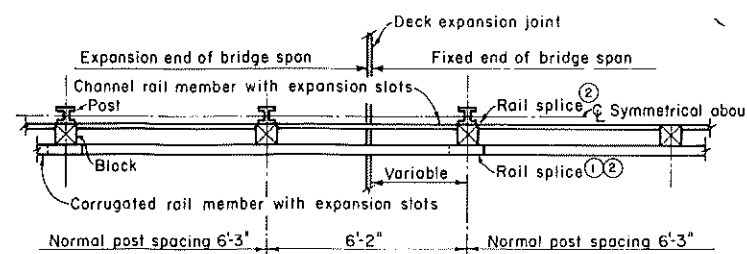
- ① Post bolts to extend beyond the tightened nuts within limits of $\frac{1}{4}$ to $\frac{1}{2}$.
- ② When barrier separates to double post mounting:
 - a) use $\frac{5}{8}$ " button or alternate bolt with washer and hex nut.
 - b) use $\frac{5}{8}$ " carriage bolt with washer and hex nut.

ASSEMBLY DETAILS



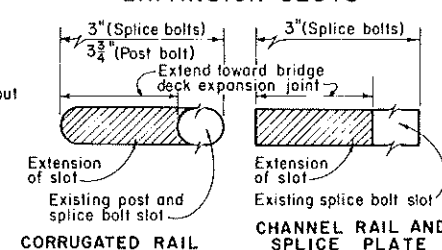
RELATION OF PARTS

METAL MEDIAN BARRIER INSTALLATION AT BRIDGE DECK EXPANSION JOINT



PLAN

EXPANSION SLOTS



CORRUGATED RAIL

CHANNEL RAIL AND SPLICE PLATE

NOTES:

- ① Place 2- $\frac{1}{2}$ " polytetrafluoroethylene (TFE) sheets between corrugated rail members. The sheets shall be 12 1/2" x 19".
- ② Adjust nuts to provide a sliding fit and set threads to prevent loosening.

GENERAL NOTES:

1. For details of parts see Standard Drg. 2126A.
2. For details of guard rail installation, see Standard Drg. 2126B.

NOTE: All material and workmanship shall be in accordance with the current State of Oregon Standard Specifications for Highway Construction.

STATE OF OREGON DEPARTMENT OF TRANSPORTATION STATE HIGHWAY DIVISION STANDARD	
GUARD RAIL AND METAL MEDIAN BARRIER	
JUNE, 1980	
DATE	DESCRIPTION
OCT 1980	TYPE 4 GUARD RAIL ADDED.
SEPT 1981	BLOCKS TOENAILED TO POSTS.
NOV 1981	EXPANSION JOINT NOTE REV.
APPROVED	
ASST. STATE HIGHWAY ENGINEER	
DRG. NO. 2126	

NOTE
THE SCALE OF THIS PRINT IS
APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.
DO NOT SCALE

The image contains three technical drawings:

- Left Drawing:** A side view of a rail element showing a wavy profile. It is labeled "Symmetrical about Neutral Axis". Dimensions include a total width of $3\frac{1}{4}"$, a central width of $3\frac{3}{16}"$, and a thickness of $\frac{1}{16}"$. The profile has a 10° angle at the top and a 55° angle at the bottom. A radius of $\frac{1}{16}" R$ is indicated. The bottom edge is labeled "Post Bolt Slot" and "Splice Bolt Slots".
- Middle Drawing:** An "ELEVATION OF RAIL ELEMENT" showing a rectangular cross-section. It has a height of $2"$ and a width of $4\frac{1}{4}"$. It features "Splice Bolt Slots (8 req. ea. end)" and "Post Bolt Slots Spacing as req'd.". A centerline is labeled "C Beam Element".
- Right Drawing:** A "TERMINAL CONNECTOR" showing a cross-section. It has a total width of $2'-6"$ and a height of $2"$. It features "3" x $2\frac{29}{32}"$ Slots and "1" Dia. holes". A note states: "25 1/2° bend and hole req'd. only for use with Alternate No. 1-Type 'C' end piece." The bottom edge is labeled "Neutral axis" and "3'±".

NOTE:
For guard rail installed on radii of 150 feet or less (5 min.) use rail elements pre-curved to industry standard.

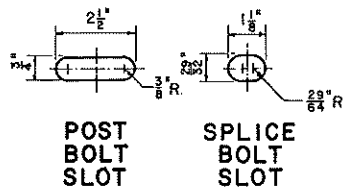


Figure 1 is a cross-sectional diagram of the base metal. It shows a vertical centerline labeled "Symmetrical about". The top of the metal has a horizontal dimension of 3 inches. The vertical depth of the splice bolt slot is 12 inches. The base metal thickness is indicated as 0.105" Nominal plus Galv. The diagram shows a splice bolt slot with a curved bottom and a vertical centerline.

Technical drawing of a splice bolt. The top view shows a bolt with a 16 inch length and two holes. The side view shows a 24 inch (1 inch tolerance) length, a 3 inch minimum radius, and a 6 inch diameter. The bolt is labeled "Splice Bolt Slots (4 req.)".

Trim post as required

Terminal Connector (see detail)

Rail element

ALTERNATE 1

ALTERNATE 2

Splice bolt slot in rail member

16" approx.

W6 x 9.0 (5)

6'-0"

28"

12"

7"

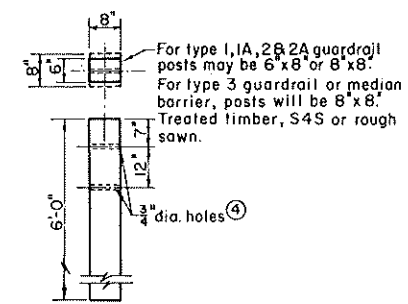
1 1/4"

3/4" holes (4)

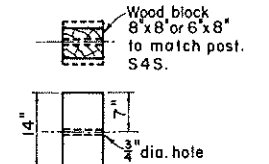
1/4" steel plates (2)

Traffic side when used for guardrail

- ① Optional; one 10" x 12" x $\frac{1}{4}$ " plate, welded or bolted onto post.
- ② Omit when post welded to base plate.
- ③ Place 1 ft. long 12 gauge W beam back-up plate between beam and block at alternate posts where beam splices do not occur.



④ Lower hole optional. Required only where channel rail is to be installed.
⑤ Replaces W6x8.5, which is acceptable as an alternate.



USE ON TYPES 2, 2A & 3 GUARD
RAIL & ON MEDIAN BARRIER.

ALTERNATIVE No. 1

- ⑥ Furnished & installed by structure contractor when shown on structure plans.
- ⑦ 5 1/2" min. penetration into concrete slabs other than bridge decks. Cast in place or core and grout with expanding grout.
- ⑧ Not required for use with "Snow Load" washer.

Technical drawing of a hexagonal nut. The top view shows a hexagon with a central hole. The side view shows the hexagonal profile. Dimensions are given in inches:

- Top view: $\frac{1}{4}$ " (width of the hexagon)
- Side view: $\frac{11}{16}$ " (height of the hexagon)
- Note: $\frac{31}{32}$ " dia. x $\frac{3}{32}$ " deep recess one or both sides.

31^a
32 dia. x 3^a
32 deep
recess one
or both
sides.

1 1/2^a

11^a
16

Technical drawing showing the connection detail of a box culvert to a steel plate.

Plan View (Top):

- Overall width: 4'
- Plate thickness: $1\frac{1}{2}"$
- Distance from edge to first hole: $5\frac{1}{2}"$
- Distance between holes: $5\frac{1}{2}"$
- Distance from last hole to edge: $5\frac{1}{2}"$
- Overall height: 8"
- Distance from edge to first hole (vertical): $2\frac{1}{2}"$
- Distance between holes (vertical): $2\frac{1}{2}"$
- Distance from last hole to edge (vertical): $2\frac{1}{2}"$

Section View (Bottom):

- Steel post (above) to be vertical. Height to suit.
- Concrete top of box culvert, etc.
- Leveling nut & washer (4 req.)
- $\frac{7}{8}"$ bolt, hex. nut, & washer (4 req.)
- 1" min. Grout pad

USE WHEN DEPTH OF COVER IS LESS
THAN NORMAL FOR POST INSTALLATION.

GENERAL NOTES:

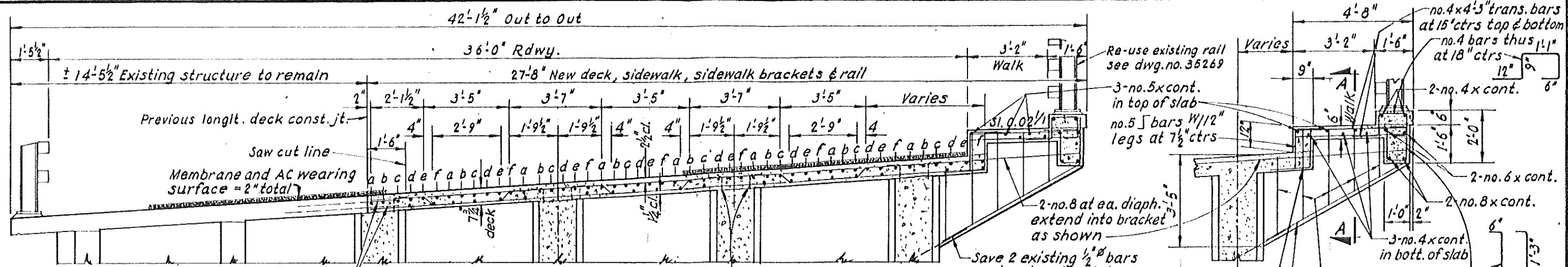
1. For assembly and installation details, see Drgs. No 2126 & 2126B.
2. For details of guard rail connections to structural handrails, see special details or Standard Drawings as called for on the plans.
3. All indicated welds shall attain the full strength of the section welded.

NOTE: All material and workmanship shall be in accordance with the current State of Oregon Standard Specifications for Highway Construction.

STATE OF OREGON DEPARTMENT OF TRANSPORTATION STATE HIGHWAY DIVISION STANDARD GUARD RAIL AND METAL MEDIAN BARRIER PARTS JUNE, 1980		APPROVED <i>[Signature]</i> ASST. STATE HIGHWAY ENGINEER
DATE	DESCRIPTION	DRG. NO. 2126A

NOTE
THE SCALE OF THIS PRINT IS
APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.

DO NOT SCALE



DECK STEEL

48-no.7 longitudinal negative moment bars a thru f at bents 2,3 & 4 place as shown in the top mat at about 6" ctrs, and no.4 bars spliced 1'-4" to all bars a,c & f

20-no.5 longitudinal bars in bottom portion of deck (place as shown.)

No.5 Straight transverse bars at 15" ctrs top of deck
No.5 Straight transverse bars at 15" ctrs bottom of deck.

No.5 Bent transverse bars at 15" ctrs alternate bent and straight bars at 7 1/2" ctrs.

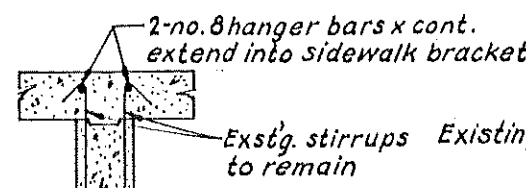
Stop transverse bars 6" ± clear of all transverse beams.

TYPICAL DECK SECTION

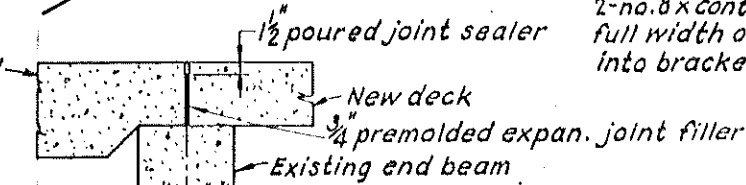
Scale: 1/2" = 1'-0"

NOTE
THE SCALE OF THIS PRINT IS
1/2" THAT OF THE ORIGINAL DRAWING
FOR EXAMPLE:
INDICATED SCALE 1/2" = 1'-0"
SHOULD BE READ 1/4" = 1'-0"
INDICATED SCALE 1/4" = 1'-0"
SHOULD BE READ 1/8" = 1'-0"

SECTION EXISTING BEAMS D & E



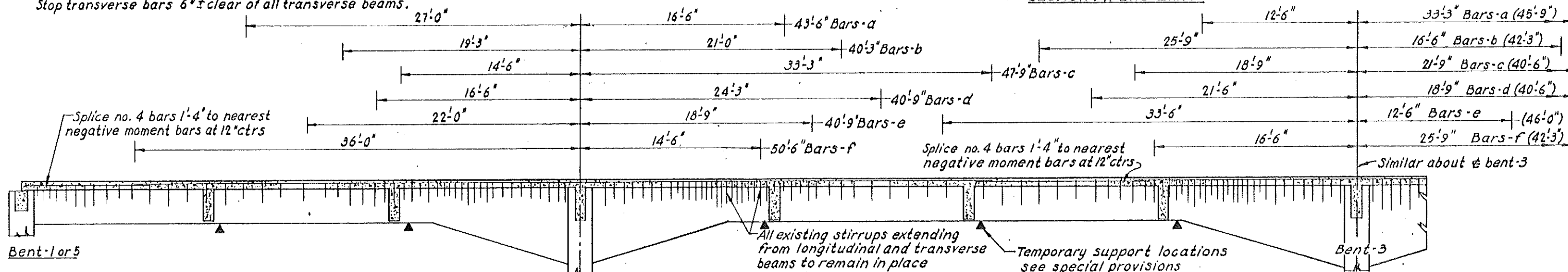
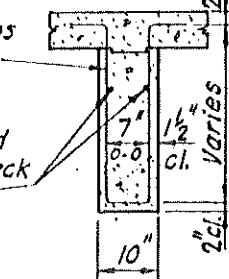
SECTION AT END BENTS



SIDEWALK BRACKET

2-no.8 x cont. extend full width of new deck into bracket

SECTION A-A



CONSTRUCTION SEQUENCE-DECK REPLACEMENT

1. Install temporary barrier rail and move all traffic to left side of structure. See grading plans dwg. no.2203 for traffic control details.
2. Remove existing deck and sidewalk as shown. See deck removal notes
3. Existing rail to be salvaged; construct new deck, walk (See special provisions). Reinstall salvaged rail.
4. Place membrane and wearing surface a minimum of 14 days after final deck pour, over entire 36'-0" wide deck.

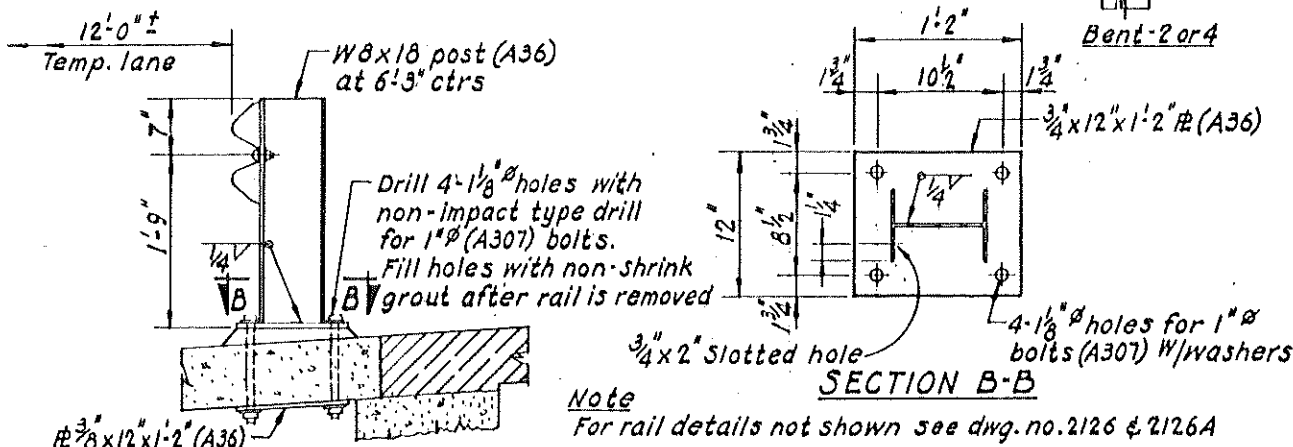
DECK REMOVAL NOTES

1. Removal of existing deck shall consist of the removal of existing curb, right rail, sidewalk, deck & sidewalk brackets and the top 1" of the longit. & trans. b.m's. (All loose conc. shall be removed from beams.)
2. Details for removal of the existing deck and construction of the new deck shall be submitted for approval by the state prior to commencement of work.
3. Prior to removal of the existing deck, all temporary supports shall

- be in place as noted in the Special Provisions.
4. All existing reinforcing steel that is to remain in place shall be free from dirt, detrimental rust or scale, paint, oil old concrete or other foreign substance.

APPROVED: <i>Walter J. Hart</i> BRIDGE ENGINEER	OREGON DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN SECTION
DESIGNED: <i>Tom Lulay</i> DRAWN: <i>J. Hardin</i> CHECKED: <i>OMP 3-23-83</i> REVIEWED: <i>JEB 3-22-83</i> CALC. BOOK: <i>17.7.9</i>	GRANDE RONDE RIVER BR. REDECKING
DATE: <i>March, 1983</i> BRIDGE NO. <i>1996 B</i>	DECK SECTION & NEG. MOM. STEEL SHEET 2 OF 5 DRAWING NO. <i>38275</i>

TEMPORARY GUARDRAIL DETAILS



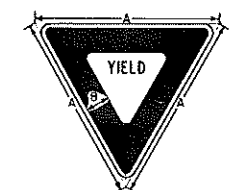
Corners not to be rounded.



Type "EE"

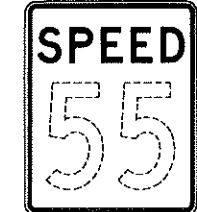
SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R-1-24	24" x 24"	8" C	5"	5"
R-1-30	30" x 30"	10" C	5"	5"

* Reduce spacing by 40%.



Type "EEE"

SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R-2-36	36" x 36"	8" C	5"	5"
R-2-48	48" x 48"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
CP2-1-48	36" x 48"	8" C	5"	5"
CP2-1-60	48" x 60"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
CP2-1-48	36" x 48"	8" C	5"	5"
CP2-1-60	48" x 60"	10" C	5"	5"

* Reduce spacing by 33%.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R2-5C-48	36" x 48"	8" C	5"	5"
R2-5C-60	48" x 60"	10" C	5"	5"

All signs on this sheet shall be Type "C" unless noted otherwise.

Regulatory signs shall have non-reflectORIZED black letters, symbols and borders on a white background, unless noted otherwise. All backgrounds shall be reflectORIZED. The Federal Highway Administration's standard rounded capital letter alphabets and letter spacing shall be used unless noted otherwise. For detailed sign drawings and dimensions, see the publication "Standard Highway Signs" by the Federal Highway Administration, 1971. The border, margin and corner radii shall be as follows unless noted otherwise.

BOARD DIMENSIONS	BORDER	MARGIN	CORNER RADIUS
Either or both less than 30"	5/8"	3/8"	1 1/2"
Both 30"	3/4"	1/2"	1 7/8"
Both more than 30" & either less than 48"	7/8"	5/8"	2 1/4"
Both 48" or larger	1 1/4"	3/4"	3"



Type "H"

SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R3-1-24	24" x 24"	8" C	5"	5"
R3-1-30	30" x 30"	10" C	5"	5"



Type "H"

SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R3-2-24	24" x 24"	8" C	5"	5"
R3-2-30	30" x 30"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R3-3-24	24" x 24"	8" C	5"	5"
R3-3-30	30" x 30"	10" C	5"	5"

* Reduce spacing by 35%.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R3-5L-36	36" x 36"	8" C	5"	5"
R3-5L-48	48" x 48"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R3-5R-36	36" x 36"	8" C	5"	5"
R3-5R-48	48" x 48"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
CP3-0-30	24" x 30"	8" C	5"	5"
CP3-0-36	36" x 36"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
CP3-1-30	24" x 30"	8" C	5"	5"
CP3-1-36	36" x 36"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R4-1-48	36" x 48"	8" C	5"	5"
R4-1-60	48" x 60"	10" C	5"	5"

* Reduce spacing by 40%.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R4-2-48	36" x 48"	8" C	5"	5"
R4-2-60	48" x 60"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R4-3-48	36" x 48"	8" C	5"	5"
R4-3-60	48" x 60"	10" C	5"	5"

* Reduce spacing by 25%.



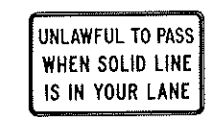
SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R4-7-48	36" x 48"	8" C	5"	5"
R4-7-60	48" x 60"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R4-7-30	24" x 30"	8" C	5"	5"
R4-7-36	36" x 36"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R4-7-30	24" x 30"	8" C	5"	5"
R4-7-36	36" x 36"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
CP4-3-36	60" x 36"	8" C	5"	5"
CP4-3-48	72" x 48"	10" C	5"	5"

* Reduce spacing by 50%.



Type "EE"

SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R5-1-30	30" x 30"	8" C	5"	5"
R5-1-36	36" x 36"	10" C	5"	5"



Type "EE"

SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
R5-2-30	30" x 30"	8" C	5"	5"
R5-2-36	36" x 36"	10" C	5"	5"



Non-reflectORIZED black letters and background.
ReflectORIZED white arrow symbol and 1/2 flush border.



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
RE-2L-24	18" x 24"	8" C	5"	5"
RE-2L-30	24" x 30"	10" C	5"	5"



SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
RE-2R-24	18" x 24"	8" C	5"	5"
RE-2R-30	24" x 30"	10" C	5"	5"



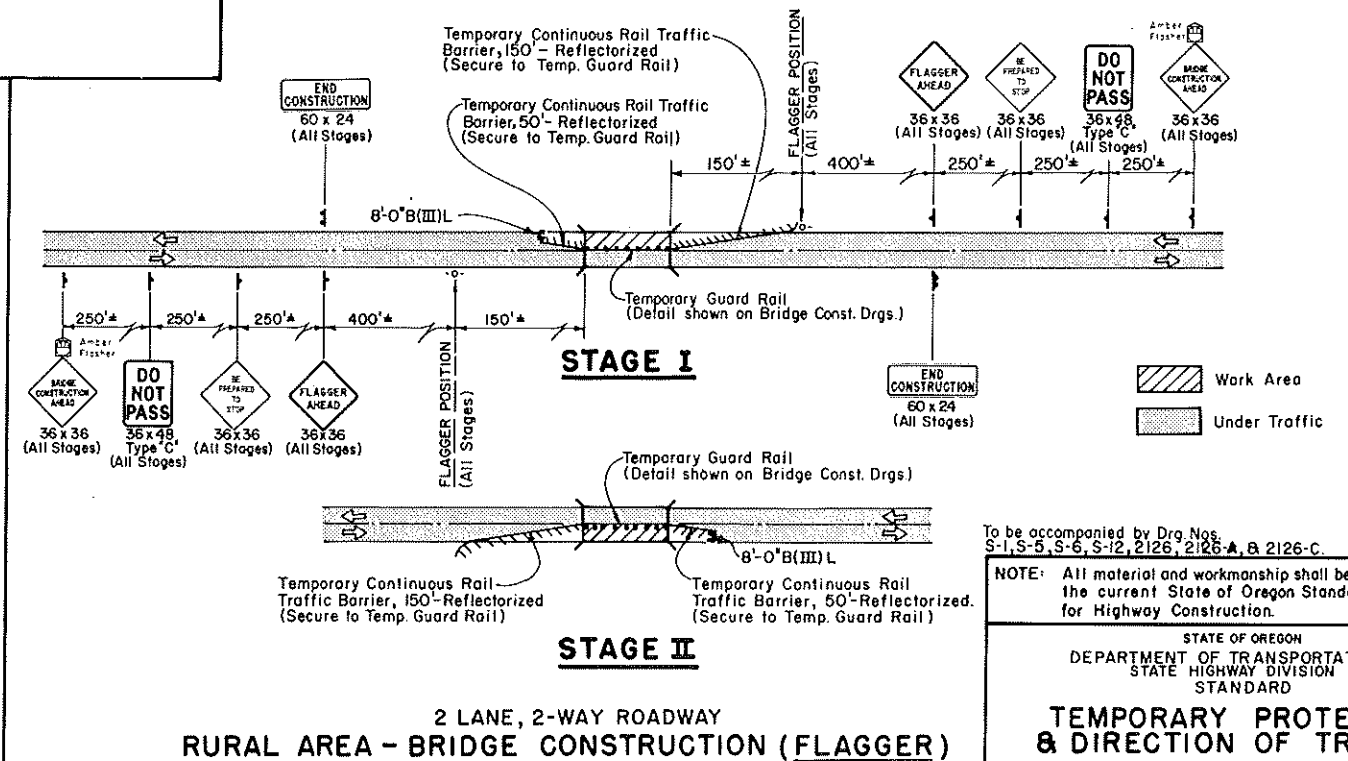
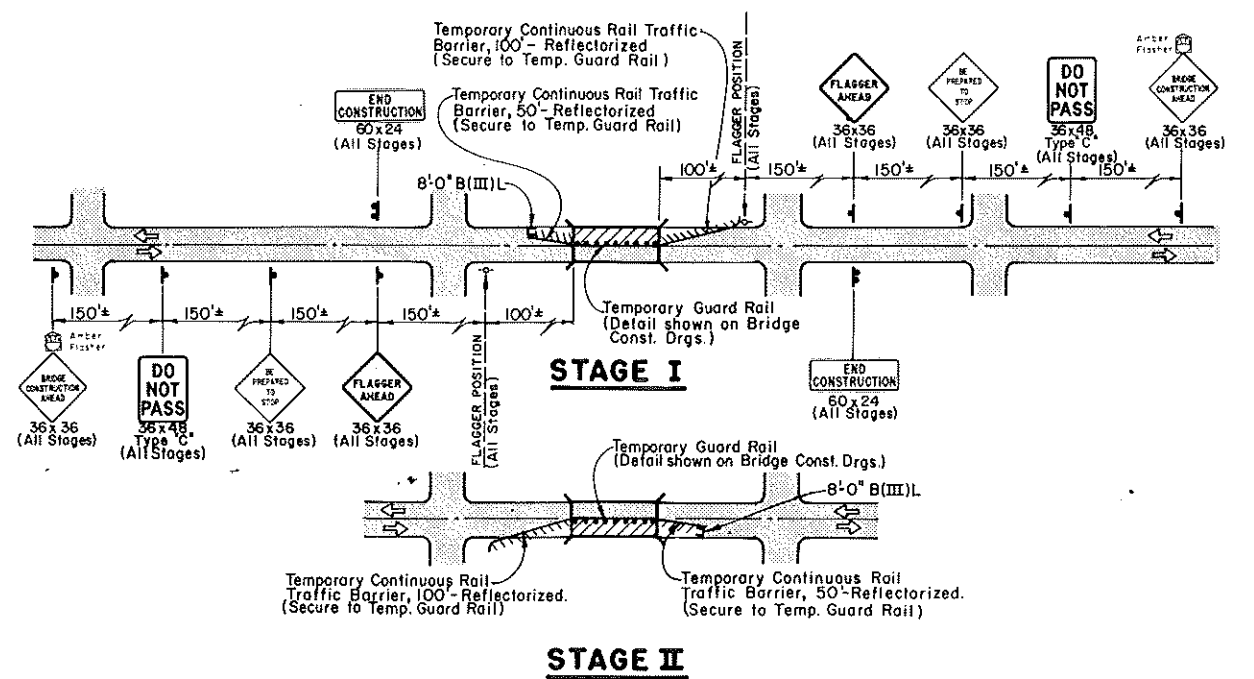
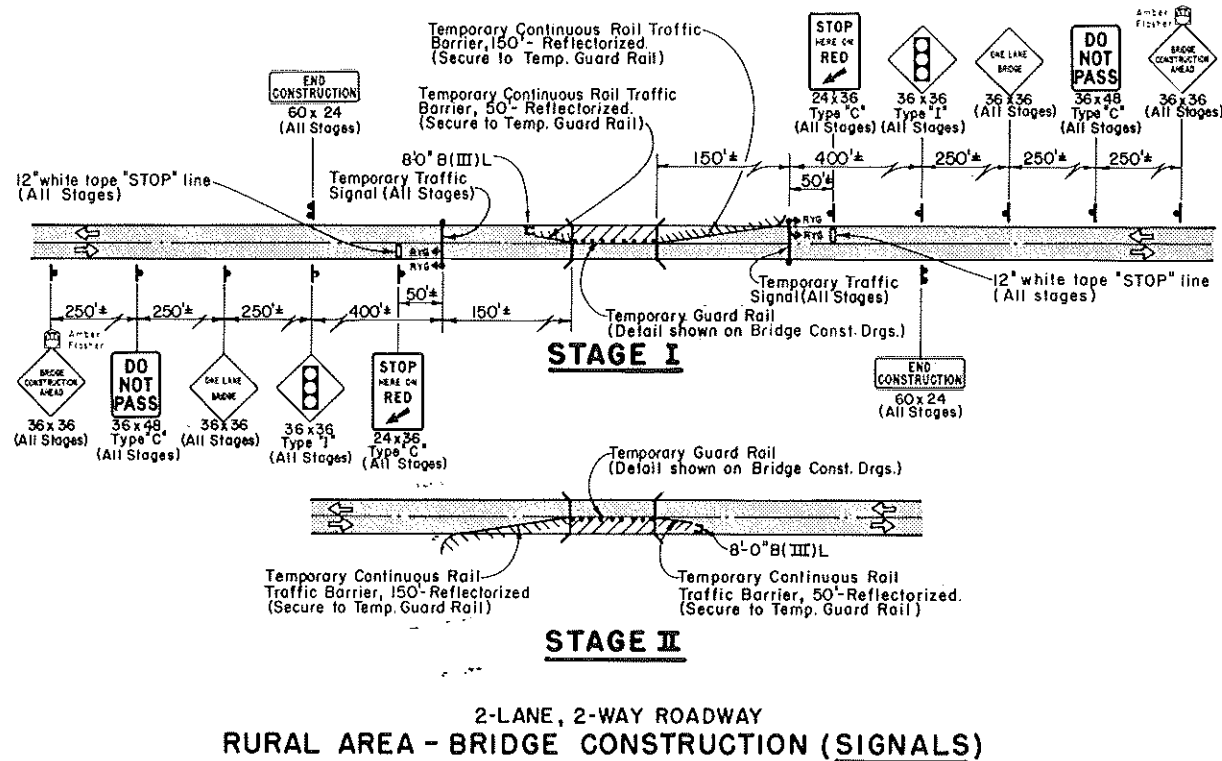
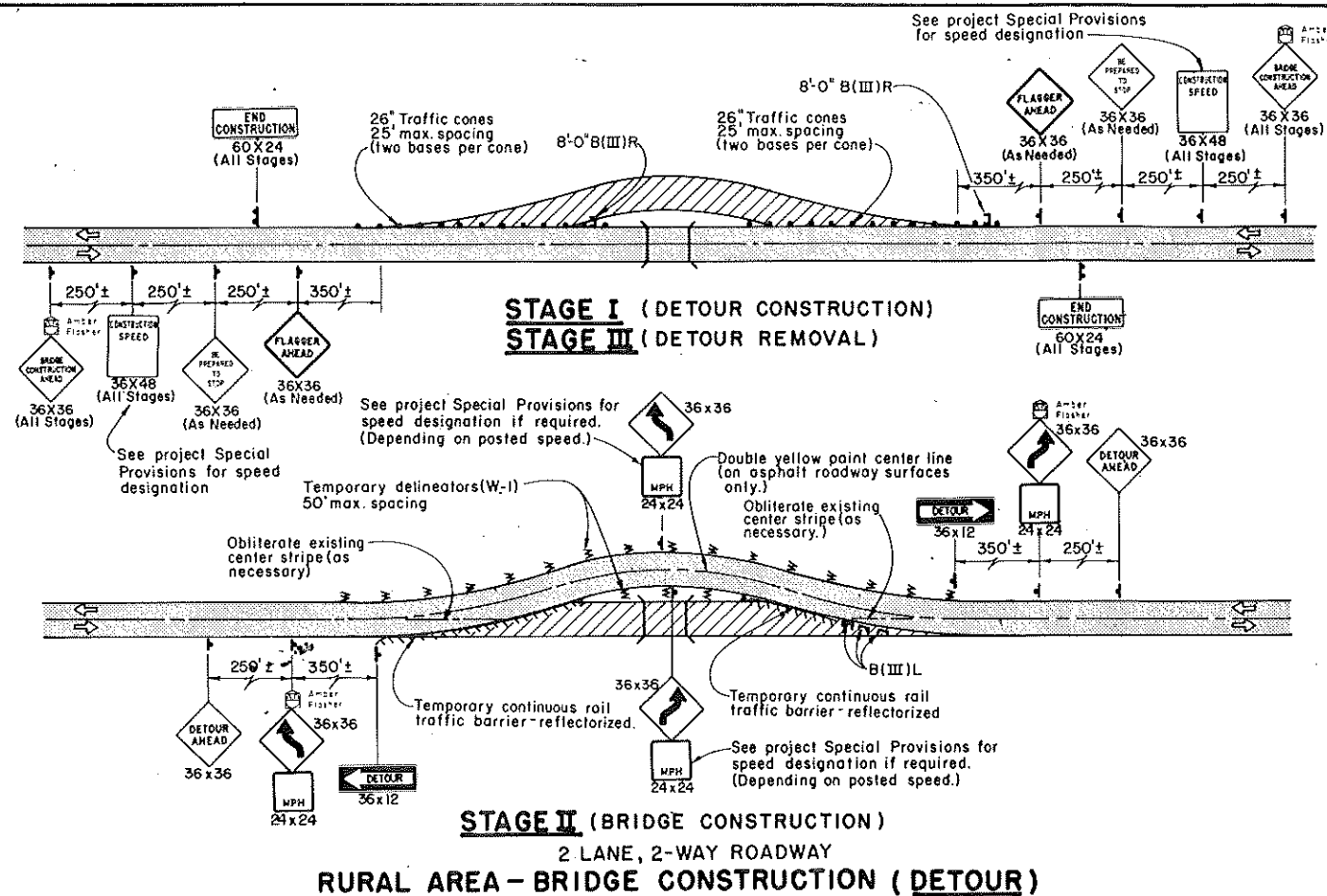
SIGN SPECIFICATIONS				
SIGN NUMBER	BOARD SIZE	LETTERS	BORDER	
PE-4-36	48" x 36"	8" C	5"	5"
PE-4-48	60" x 48"	10" C	5"	5"

* Reduce spacing by 50%.

NOTE
THE SCALE OF THIS PRINT IS
APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.
DO NOT SCALE

DATE	INITIAL	REVISION
9/72	ESG	Revised R5-9 & R5-1.
4/73	ESG	General Revision
1/74	ESG	Deleted OR2-7.
1/74	ESG	Added R1-2.
7/74	ESG	Revised R1-1.
4/76	ESG	Revised OR4-9.
4/76	ESG	Deleted OR2-1a & R2-2.
4/76	ESG	Added OR2-6.
4/79	ESG	Removed Plaques.
9/80	ESG	Revised R2-5C

OREGON STATE HIGHWAY DIVISION TRAFFIC ENGINEERING SECTION	
STANDARD SIGNING DETAILS REGULATORY SIGNS	
DATE JUN 1972	DESIGNED BY TRAFFIC ENGINEER
S-5	



NOTE
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APPROXIMATELY 45% OF THE
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GENERAL NOTES:

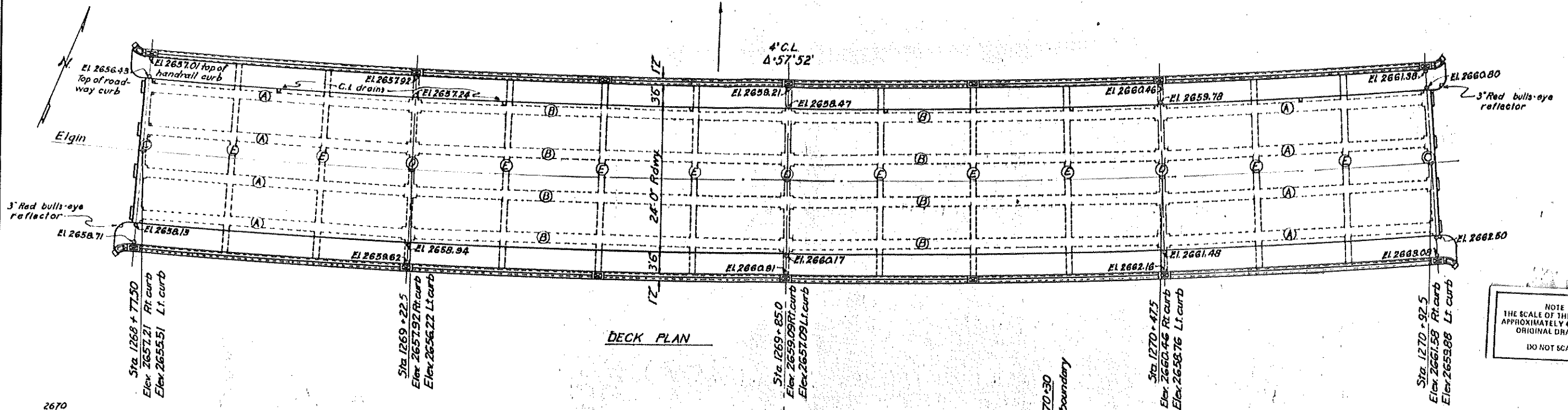
•Typical Barricade designation- B(III)L.
(See Std. Drg. No. 2126-C)

NOTE: All material and workmanship shall be in accordance with the current State of Oregon Standard Specifications for Highway Construction.

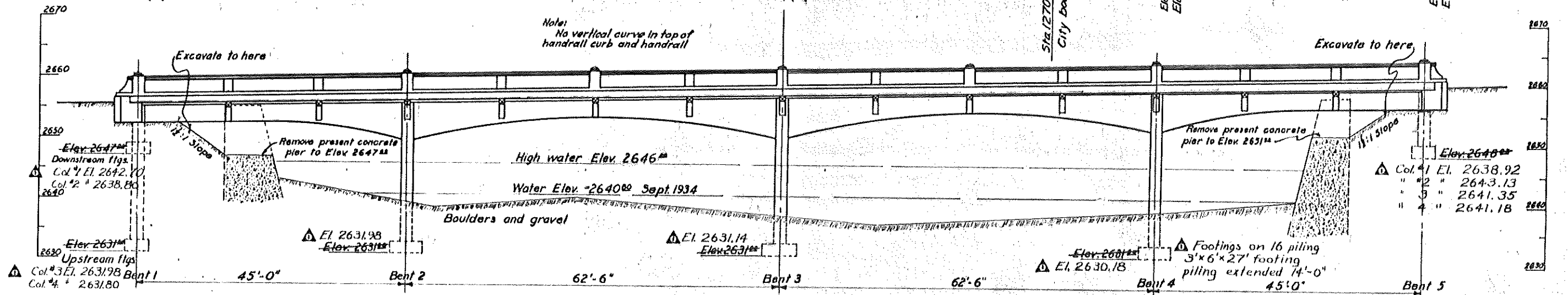
STATE OF OREGON
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY DIVISION
STANDARD

**TEMPORARY PROTECTION
& DIRECTION OF TRAFFIC
BRIDGE CONSTRUCTION
RURAL & URBAN AREAS
NOVEMBER, 1980**

REVISIONS		APPROVED
DATE	DESCRIPTION	<i>E. J. Hunter</i>
		ASST. STATE HIGHWAY ENGINEER
		DRG. NO. 2203



NOTE
THE SCALE OF THIS PRINT IS
APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.
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ELEVATION
Scale 1"=1'-0"

GENERAL NOTES:

- All concrete shall be class "A" mix, except that above bottom of roadway slab which shall be class "D" mix, allowable stress = 800 ψ , and handrail which shall be as shown on dwg. No. 4210.
- All exposed corners shall have $\frac{1}{4}$ " bevel unless noted or shown otherwise.
- All reinforcing steel shall be deformed bars intermediate grade, allowable stress = 18,000 ψ , placed 2" clear from nearest face of concrete, except where noted or shown otherwise.
- Footing elevations may be varied at the discretion of the engineer in order to secure suitable foundations.
- Shear keys shall be used at all construction joints between beams and slab.
- No forms supporting beams in any span shall be removed until all beams and slabs in all spans have been poured at least 28 days.
- Bridge designed for H-15 loading.
- All materials and workmanship shall conform to the specifications for bridges of the Oregon State Highway Commission.

Approved:

State Highway Engineer

Bridge Engineer

FOR INFORMATION ONLY

As constructed 1-10-73
OREGON
STATE HIGHWAY COMMISSION
GRANDE RONDE RIVER BRIDGE
OVER
GRANDE RONDE RIVER-UNION CO.
ON
WALLOWA LAKE HIGHWAY
PLAN AND ELEVATION

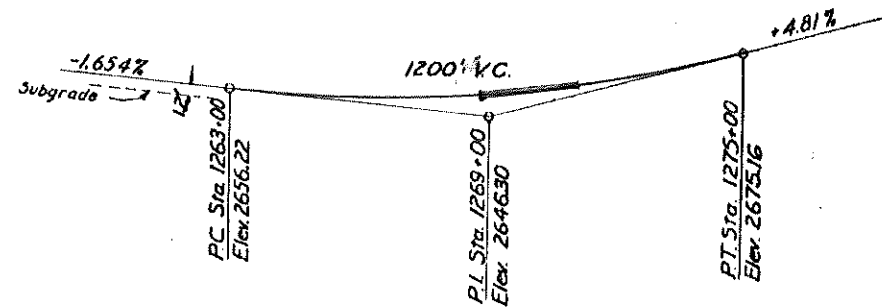
SCALE AS NOTED
JAN 3, 1935
CALC. BK. NO. 143
ACCOMPANIED BY DWGS. 5436, 5437, 4210

DRAWN BY M.A.L.
TRACED BY R.H.F.
CHECKED BY C.R.K.

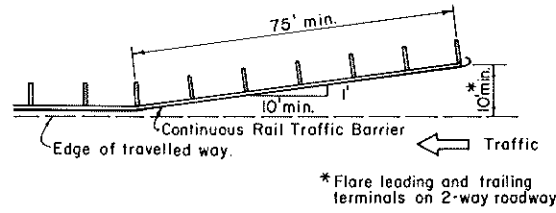
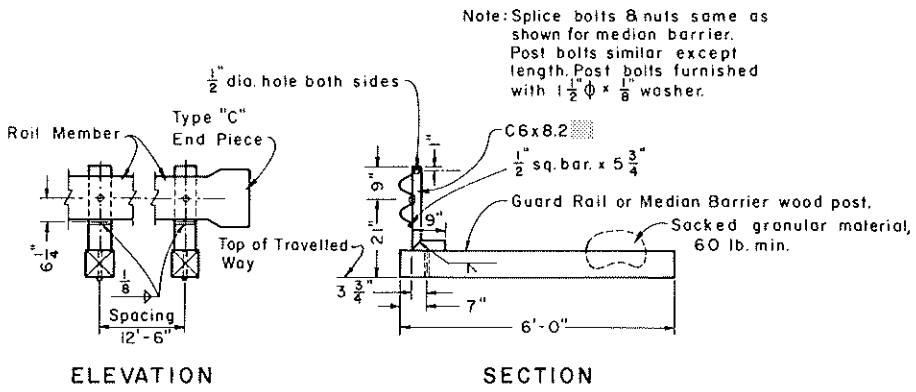
SHEET 1 OF 4
BRIDGE NO. 1996
DRAWING NO. 5435

Note:
Grade Elevations shown refer to
top of deck at curb lines and are 12' above
profile grade which is maintained 10'
left of & of roadway

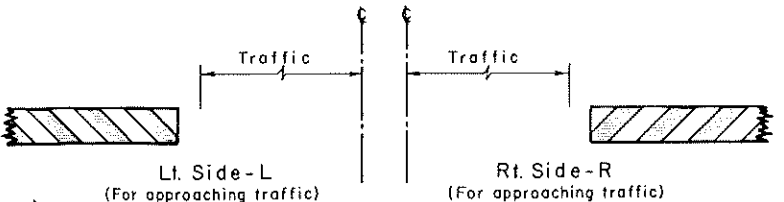
GRADE LINE DATA
Not to scale



CONTINUOUS RAIL TRAFFIC BARRIER



METHOD OF FLARING TERMINALS



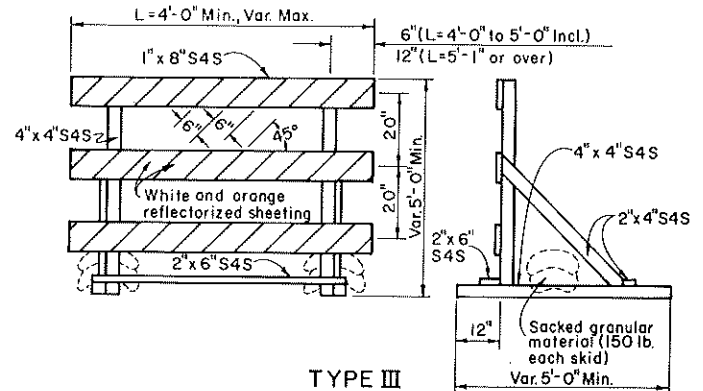
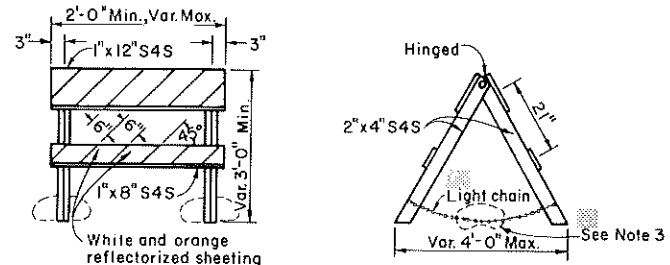
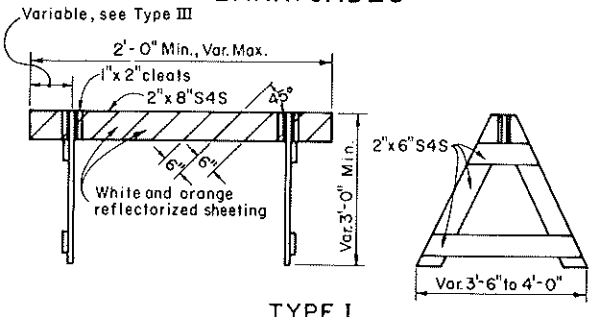
SLOPE DIAGRAM FOR BARRICADE MARKING

NOTE: Markings for barricade rails shall slope downward at an angle of 45 degrees in the direction traffic is to pass. Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring. Where both right and left turns are provided for, the chevron striping may slope downward in both directions from the center of the barricade.

Barricade
Barricade type
Marking slope
B(II)R

TYPICAL BARRICADE DESIGNATION AS SHOWN ON PLANS

BARRICADES



NOTES:
1. All non-reflectorized surfaces shall be painted white.
2. Alternate methods and materials for the supports permitted with approval of engineer.
3. Types I and II to be weighted as directed by the engineer.
4. For rails less than 3 feet long, 4 inch wide stripes may be used.

NOTE
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APPROXIMATELY 45% OF THE
ORIGINAL DRAWING.
DO NOT SCALE

NOTE: All material and workmanship shall be in accordance with the current State of Oregon Standard Specifications for Highway Construction.

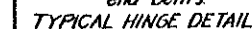
STATE OF OREGON
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY DIVISION
STANDARD

BARRICADES & CONTINUOUS RAIL TRAFFIC BARRIER
FEBRUARY 1973

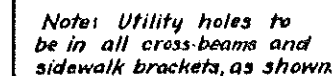
DATE	REVISIONS	DESCRIPTION
JAN 1981	1	"C" END PIECE DESIGNATION.
MAR 1981	2	REV. TRAFFIC BARR. RAIL HEIGHT.
MAR 1982	3	REV. TYPE II BARRICADE.

APPROVED
[Signature]
ASST. STATE HIGHWAY ENGINEER

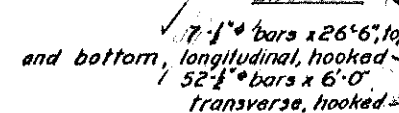
DRG. NO. 2126 C



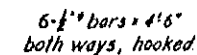
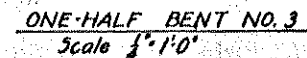
BENT NO. 1
Scale 1"=10'



SECTION A-A
Scale 1"=1'-0"



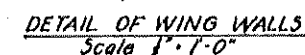
ONE-HALF BENTS NO. 2 & 4
Scale 1" = 10'



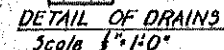
ONE-HALF BENT NO. 5
Scale 1"=10'



Bearing surfaces to be planed in direction of motion and coated with graphite before assembly.



DETAIL OF WING WALLS
Scale 1" = 1'-0"



DETAIL OF DRAINS
500/8 1" x 1'-0"

FOR INFORMATION ONLY

OREGON
STATE HIGHWAY COMMISSION
GRANDE RONDE RIVER BRIDGE
GENERAL DETAILS

SCALE AS NOTED
JAN. 10 1935

DRAWN BY M.A.L.
CHECKED BY

TRACED BY R.H.F.
DRAWING NO. 5407

BRIDGE NO. 1996

